

Recovery Plan Action Status

Plan Name: Lana'i Plant Cluster Recovery Plan

Plan Status: Final

Plan Date: 29-Sep-95

Lead Agency: USFWS

Lead Office: Pacific Islands Fish And Wildlife Office

(808)
792-9400)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	1	111	Identify all wild populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii	Research: Population Surveys	Contract	This is an ongoing action, as the status of the species and their threats change constantly. Two historical populations of Abutilon menziesii have been relocated on State/City and County lands on Oahu at Kalaeloa and on DOD lands at Lualualei.

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Lanai sandalwood (= `iliah) (<i>Santalum freycinetianum</i> var. <i>lanaiense</i>)	1	1135	Protect habitat owned by Ulupalakua Ranch	Partially Complete	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Ulupalakua Ranch, U.S. Geological Survey, Biological Resources Division	Acquisition: Management Agreement	Internal Administrative	BRD has an agreement with Ulupalakua Ranch to manage a small portion (10 acres) of the <i>Santalum freycinetianum</i> var. <i>lanaiensis</i> habitat on east Maui.
Lanai sandalwood (= `iliah) (<i>Santalum freycinetianum</i> var. <i>lanaiense</i>), Ha'iwale (<i>Cyrtandra munroi</i>)	1	1136	Protect habitat owned by the State of Hawai'i	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Acquisition: Management Agreement	Internal Administrative	The one extant population of <i>Santalum freycinetium</i> var. <i>lanaiensis</i> on west Maui is within the Lihau section of the West Maui Natural Area Reserve. One population of <i>Cyrtandra munroi</i> on west Maui is within the Honokowai section of the West Maui Natural Area Reserve, and the remaining populations are on Alexander and Baldwin and Maui Land and Pineapple Co. lands, all within the West Maui Watershed Partnership. One population of <i>Tetramolopium remyi</i> on State land in West Maui below Paupau is not protected.

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No common name (Gahnia lanaiensis), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), Ha' iwale (Cyrtandra munroi)	1	1211	Determine fencing for Lana'ihale area	Partially Complete	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, Castle & Cooke, Inc.	Management: Habitat Maintenance and Manipulation, Management: Planning, Management: Predator and Competitor Control	Contract, Internal Technical Assistance, Species Expert	The fences for Lanaihale have been determined through the cooperative agreement between ES and C&CI.

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No common name (Gahnia lanaiensis), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), Ha' iwale (Cyrtandra munroi)	1	1212	Implement fencing for Lana'ihale area	Partially Complete	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Castle & Cooke, Inc.	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Volunteer	The first of three fencing stages to protect Lanaihalale was completed in 2005 and protects the only population of Phyllostegia glabra var. lanaiensis, at least one population of Cyanea macrostegia ssp. gibsonii, the Lanai populations of Cyrtandra munroi, and two of the three populations of Viola lanaiensis. The remaining C. macrostegia ssp. gibsonii populations and the remaining Viola lanaiensis population are within stage 2. Gahnia lanaiensis populations are within stage 3. Santalum freycinetianum var. lanaiensis populations are scattered throughout all three stages.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	1	12144	Determine need to fence Santalum sites on Maui	Complete	FY 1995 - FY 1999	FY 2000 - FY 2004	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Internal Technical Assistance	BRD has fenced a small portion (10 acres) of the Santalum freycinetianum var. lanaiensis habitat on east Maui. The west Maui population is within the Lihau section of the West Maui Natural Area Reserve and part of the West Maui Watershed Partnership, which includes plans for habitat management on a landscape scale.

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Lanai sandalwood (= `iliahī) (<i>Santalum freycinetianum</i> var. <i>lanaiense</i>)	1	12145	Fence Maui <i>Santalum</i> individuals, if needed	Partially Complete	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Ulupalakua Ranch	Management: Habitat Maintenance and Manipulation	Contract	BRD has fenced a small portion (10 acres) of the <i>Santalum freycinetianum</i> var. <i>lanaiensis</i> habitat on east Maui and DLNR has placed strategic fences to prevent the ingress of goats and deer into Lihau section of the West Maui NAR.
No common name (<i>Gahnia lanaiensis</i>), No common name (<i>Tetramolopium remyi</i>), No common name (<i>Viola lanaiensis</i>), Lanai sandalwood (= `iliahī) (<i>Santalum freycinetianum</i> var. <i>lanaiense</i>), No common name (<i>Phyllostegia glabra</i> var. <i>lanaiensis</i>), Haha (<i>Cyanea macrostegia</i> ssp. <i>gibsonii</i>), No common name (<i>Abutilon eremitopetalum</i>), Ko' oloa' ula (<i>Abutilon menziesii</i>), Ha' iwale (<i>Cyrtandra munroi</i>)	1	1216	Remove ungulates from fenced areas	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Castle & Cooke, Inc., U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Contract	This task is current for all existing fenced areas except Puu o Kali, where BRD is working on removing the last deer within the fence.

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	1	1218	Determine effects of excluding ungulates	Obsolete	FY 1995 - FY 1999		Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	While removal of ungulates may allow the alien plant species to increase, the impact of the ungulates on native plants is well understood, and this task is no longer needed. Rather, any area that is fenced and free of ungulates must also be managed for alien plant species, especially those that can radically alter the habitat.

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii), Ha'iwale (Cyrtandra munroi)	1	1231	Determine alien plant control methods	Ongoing Current	FY 1995 - FY 1999		Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Contract	Numerous studies on the control of various alien plants have been or are being conducted by the Invasive Species Committees and land managers on each island, and the results of these studies are used to determine the best method of weed control for alien plant pests found in the habitat of these nine species.

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Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	1	12325	Implement weed control for Kanepu'u Santalum	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii	Management: Habitat Maintenance and Manipulation	Contract	TNCH works with a local community group to manage the Kanepuu Preserve. Major habitat altering weeds are controlled, but actions are limited due to lack of adequate funding.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	1	12328	Implement weed control for E Maui Santalum site	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Ulupalakua Ranch, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Contract	BRD controls major habitat altering alien plants in a small portion (10 acres) of the Santalum freycinetianum var. lanaiensis habitat on east Maui.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	1	12329	Implement weed control for W Maui Santalum site	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Management: Habitat Maintenance and Manipulation	Contract	

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No common name (Tetramolopium remyi), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii)	1	1241	Develop fire protection plans	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, Maui County Department of Fire Control, Hawaii County Fire Department	Management: Habitat Maintenance and Manipulation	Contract	
No common name (Tetramolopium remyi), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii)	1	1242	Implement fire protection plans	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, Maui County Department of Fire Control, Hawaii County Fire Department, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Contract	

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Lanai sandalwood (= `iliali) (Santalum freycinetianum var. lanaiense)	1	12511	Control rodents at Kanepu'u	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii	Management: Predator and Competitor Control	Contract	Rodent control is currently only conducted within the immediate vicinity of those species which are known to be impacted by rodents, including species of the genera Cyanea, Cyrtandra, and Delissea. Large scale rodent control will not be possible until aerial pesticide application is registered for use in the state of Hawaii.
Lanai sandalwood (= `iliali) (Santalum freycinetianum var. lanaiense), Haha (Cyanea macrostegia ssp. gibsonii)	1	12512	Control rodents at Lana'ihale site	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Castle & Cooke, Inc.	Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance	Large scale rodent control will not be possible until aerial pesticide application is registered for use in the state of Hawaii.
Lanai sandalwood (= `iliali) (Santalum freycinetianum var. lanaiense)	1	12513	Control rodents at E Maui Santalum site	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Ulupalakua Ranch, U.S. Geological Survey, Biological Resources Division	Management: Predator and Competitor Control	Contract	Rodent control is currently only conducted within the immediate vicinity of the plants. Large scale rodent control will not be possible until aerial pesticide application is registered for use in the state of Hawaii.
Lanai sandalwood (= `iliali) (Santalum freycinetianum var. lanaiense)	1	12514	Control rodents at W Maui Santalum site	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance, Internal Technical Assistance	Large scale rodent control will not be possible until aerial pesticide application is registered for use in the state of Hawaii.

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Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	1	1254	Control spike disease as needed	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Management: Disease Control	Contract	This task has been abandoned, as spike disease does not appear to be a threat to Santalum at this time.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	1	1255	Control Santalum heart rot as needed	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii	Management: Disease Control	Contract	This task has been abandoned, as heart rot does not appear to be a threat to Santalum at this time.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	1	1256	Control Santalum seed fungus as needed	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii	Management: Disease Control	Contract	This task has been abandoned, as seed fungus does not appear to be a threat to Santalum at this time.

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	1	1262	Compensate for missing pollination vectors	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Management: Habitat Maintenance and Manipulation	Contract, Graduate Student, Internal Technical Assistance, Species Expert	This task has not been started because little is known about the pollinators of these species.

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii), Ha'iwale (Cyrtandra munroi)	1	128	Monitor status of wild populations	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	This is an ongoing task, as the status of the species change constantly, but it does not occur as frequently as it is needed - annually, and more frequently for genetic safety net species (fewer than 50 remaining individuals in the wild).

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	22	Study associated ecosystem components	Ongoing Not Current	Prior to FY 1995		Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Habitat Status	Contract	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan. Additional studies are needed to develop more precise microclimate needs for each species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii), Ha'iwale (Cyrtandra munroi)	2	23	Map alien vegetation	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, U.S. Geological Survey, Biological Resources Division	Research: Habitat Status	Contract	This task is being conducted for some alien species by the Maui and Molokai Invasive Species Committees and BRD's Hawaii Ecosystems at Risk, but a more concerted effort is needed.
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii), Ha'iwale (Cyrtandra munroi)	2	24	Study growth	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly for incidental observations during propagation, field surveys, and monitoring. More detailed experimental research is needed to fully understand this aspect of these species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	25	Study reproductive viability	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly for incidental observations during propagation, field surveys, and monitoring. More detailed experimental research is needed to fully understand this aspect of these species.
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	26	Determine parameters of viable populations	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Other: Regulations	Contract	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Lanai sandalwood (= `iliah) (Santalum freycinetianum var. lanaiense)	2	273	Determine threat from spike disease	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Disease	Contract	
Lanai sandalwood (= `iliah) (Santalum freycinetianum var. lanaiense)	2	274	Determine threat from Santalum heart rot	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Disease	Contract	
Lanai sandalwood (= `iliah) (Santalum freycinetianum var. lanaiense)	2	275	Determine threat from Santalum seed fungus	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Disease	Contract	
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= `iliah) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	276	Determine impact of other diseases / pests	Ongoing Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Predation	Contract	This is an ongoing task, as new threats are constantly entering the state and becoming established in natural areas.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	281	Determine control methods for rodents	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Agriculture, U.S. Geological Survey, Biological Resources Division, U.S. Animal and Plant Health Inspection Service, Wildlife Services (formerly Animal Damage Control)	Research: Competition	Contract	Large scale rodent control will not be possible until aerial pesticide application is registered for use in the state of Hawaii.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	2	284	Determine control methods for spike disease	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task will not be implemented until the level of threat is determined to be high enough to warrant control.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	2	285	Determine control methods for Santalum seed fungus	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task will not be implemented until the level of threat is determined to be high enough to warrant control.
Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense)	2	286	Determine control methods for Santalum heart rot	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task will not be implemented until the level of threat is determined to be high enough to warrant control.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	287	Determine control methods for other diseases and pests	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Research: Management Techniques	Contract, Graduate Student, Internal Technical Assistance, Species Expert	This task has been abandoned until other diseases or pests are observed.
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	288	Evaluate research results and use in future management	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Contract	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	311	Identify sites for expansion	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Reintroduction	Internal Administrative	Sites have been selected by DLNR for reintroduction into small scale fenced areas for several species.
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	312	Identify material to be used for augmentation	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Reintroduction	Contract	This task is limited based on material available in ex situ collections.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Lanai sandalwood (= `iliahī) (<i>Santalum freycinetianum</i> var. <i>lanaiense</i>)	2	3137	Determine propagation methods for <i>Santalum freycinetianum</i> var. <i>lanaiense</i>	Complete	Prior to FY 1995	FY 1995 - FY 1999	U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Hawaii Department of Land and Natural Resources	Management: Propagation	Contract	
No common name (<i>Gahnia lanaiensis</i>), No common name (<i>Tetramolopium remyi</i>), No common name (<i>Viola lanaiensis</i>), Lanai sandalwood (= `iliahī) (<i>Santalum freycinetianum</i> var. <i>lanaiense</i>), No common name (<i>Phyllostegia glabra</i> var. <i>lanaiensis</i>), Haha (<i>Cyanea macrostegia</i> ssp. <i>gibsonii</i>), No common name (<i>Abutilon eremitopetalum</i>), Ko' oloa' ula (<i>Abutilon menziesii</i>), Ha' iwale (<i>Cyrtandra munroi</i>)	2	314	Determine reintroduction techniques	Partially Complete	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Hawaii Department of Land and Natural Resources	Management: Reintroduction	Contract	

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	321	Implement Expansion plans: Propagate ex situ	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Hawaii Department of Land and Natural Resources	Management: Propagation	Contract	This task is limited based on the material available in ex situ collections.
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	322	Implement Expansion plans: Prepare sites	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, Castle & Cooke, Inc.	Management: Reintroduction	Contract	

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii), Ha'iwale (Cyrtandra munroi)	2	323	Implement Expansion plans: Plant	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, Castle & Cooke, Inc.	Management: Reintroduction	Contract	This task is limited based on the material available in ex situ collections.
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko'oloa'ula (Abutilon menziesii), Ha'iwale (Cyrtandra munroi)	2	324	Implement Expansion plans: Monitor and maintain new individuals	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, The Nature Conservancy of Hawaii, Castle & Cooke, Inc.	Management: Reintroduction	Contract	

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No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	2	41	Investigate feasibility and desirability of introduction	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Reintroduction	Contract	
No common name (Gahnia lanaiensis), No common name (Tetramolopium remyi), No common name (Viola lanaiensis), Lanai sandalwood (= iliahi) (Santalum freycinetianum var. lanaiense), No common name (Phyllostegia glabra var. lanaiensis), Haha (Cyanea macrostegia ssp. gibsonii), No common name (Abutilon eremitopetalum), Ko' oloa' ula (Abutilon menziesii), Ha' iwale (Cyrtandra munroi)	3	51	Determine number of populations needed for long term survival	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Other: Regulations	Contract	

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